KURUKSHETRA UNIVERSITY, KURUKSHETRA

(ESTABLISHED BY THE STATE LEGISLATURE ACT XII OF 1956)
('A+' GRADE NAAC ACCREDITED)
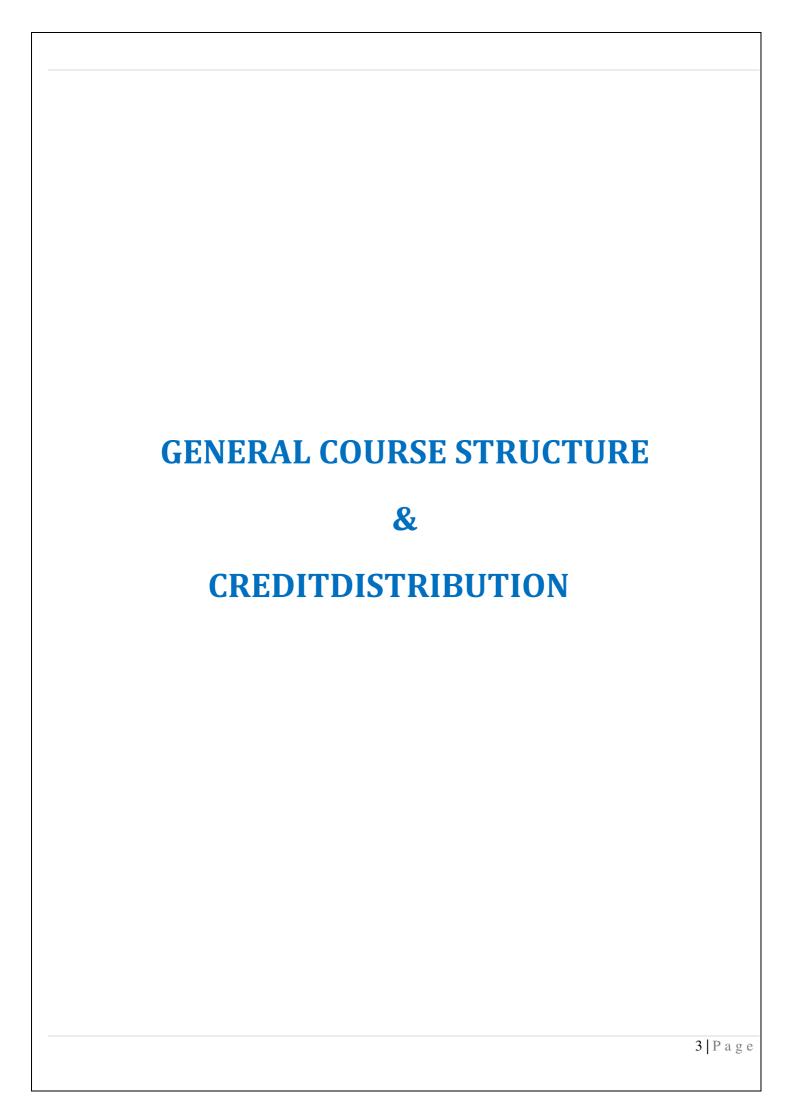

Scheme & Syllabus
of
B.Tech. Degree
in
Computer Science and Engineering(CSE)

(w.e.f. session 2023-24 onwards)

Table of Contents

GENERAL COURSE STRUCTURE

&

CREDITDISTRIBUTION

GENERALCOURSESTRUCTURE&THEME

A. Definition of Credit*:

1Hr. Lecture(L) per week	1Credit
1Hr.Tutorial(T)per week	1Credit
1Hr.Practical(P)per week	0.5Credit
2HoursPractical(P)per week	1Credit

*Except for mandatory and value added courses

B. Range of Credits:
The total number of credits proposed for the four-year B.Tech. degree in Computer Science and Engineering (CSE) is kept as 175. In addition to this, for B.Tech. with Honors & specialization/minor degree, the student has to acquire additional 18-20 credits through MOOC courses offered at SWAYAM/NPTEL portal.

C. Structure of UG Program in Computer Science and Engineering (CSE):
The structure of UG program in Computer Science and Engineering (CSE)has essentially the following categories of courses with the breakup of credits as given:

Sr. No.	Category	Credit Breakup for CSE
1	Humanities and Social Sciences including Management courses	16.5
2	Basic Science courses	23
3	Engineering Science courses including workshop, drawing, basics of electronics/ electrical/mechanical/computer etc.	18.5
4	Professional core courses	75
5	Program Elective courses relevant to chosen specialization/branch	15
6	Open subjects–Electives from other technical and/or emerging subjects	03
7	Project work, seminar and internship in industry or else where	16
8	Mandatory and Audit Courses [IDEA Workshop, IDEA Workshop Lab, Personality Development and Soft Skills, Environmental Studies, Induction Program, Constitution of India, Essence of Indian Knowledge Tradition, NCC/NSS/Sports/ Yoga/ Technical or Cultural Club/ Society Activities]	08
	Total	**175**

D. Course code and definition:

Course code	Definitions
L:T:P	Lecture: Tutorial: Practical
BSC	Basic Science Courses
ESC	Engineering Science Courses
HSC/HSM	Humanities and Social Sciences including Management courses
CSE	Program Core Courses
PEC	Program Elective Courses
OEC	Open Elective Courses
VAC	Value Added Courses
MAC	Mandatory Courses

➢ **Category-wise Courses**

HUMANITIES & SOCIAL SCIENCES COURSES [HSC/HSM]

S.No	Course No./ Code	Subject	Semester	Lecture	Tutorial	Practical	Credits
1	B23-HSC-101	English for Technical Writing	II	2	0	2	3
2	B23-HSC-102	Design Thinking	I	0	0	3	1.5
3	B23-HSM-101	Universal Human Values-II: Understanding Harmony And Ethical Human Conduct	I	3	0	0	3
4	B23-HSM-202	Innovation, Start ups and Entrepreneurship	V	3	0	0	3
5	B23-HSM-301	Organizational Behaviour	III	3	0	0	3
6	B23-HSM-302	Humanities–II Intellectual Property Rights (IPR) and Regulatory	IV	3	0	0	3
		Total Credits					**16.5**

****

BASIC SCIENCE COURSES [BSC]

S. No	Course No./ Code	Subject	Semester	Lecture	Tutorial	Practical	Credits
1	B23-BSC-101	Semiconductor Physics	I	3	1	2	5
2	B23-BSC-107	Mathematics-I	I	3	1	0	4
3	B23-BSC-104	Chemistry	II	3	0	2	4
4	B23-BSC-108	Mathematics-II	II	3	1	0	4
5	B23-BSC-106	Biology	II	3	0	0	3
6	BS23-BSC-203	Probability Statistics	III	3	0	0	3
		Total Credits					**23**

******

ENGINEERING SCIENCE COURSE[ESC]

S. No	Course No./ Code	Subject	Semester	Lecture	Tutorial	Practical	Credits
1	B23-ESC-104	Basic Electrical Engineering	I	3	1	2	5
2	B23-ESC-104	Engineering Graphics and Design	I	1	0	4	3
3	B23-ESC-101	Programming for Problem Solving	II	3	0	2	4
4	B23-ESC-107	Manufacturing Practices Workshop	II	0	0	3	1.5
5	B23-ESC-212	Digital Electronics	IV	3	0	4	5
		Total Credits					**18.5**

PROGRAM CORE COURSES[CSE]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1	B23-CSE-201	Data Structures and Algorithms	3	3:0:0	3
2	B23-CSE-203	Computer Organization & Architecture	3	3:0:0	3
3	B23-CSE-205	Object Oriented Programming	3	3:0:0	3
4	B23-CSE-207	IT Workshop (Python)	3	2:0:0	2
5	B23-CSE-209	Data Structures and Algorithms Lab	3	0:0:4	2
6	B23-CSE-211	Object Oriented Programming Lab	3	0:0:4	2
7	B23-CSE-215	IT Workshop (Python) Lab	3	0:0:4	2
8	B23-CSE-202	Advanced Programming (Java)	4	3:0:0	3
9	B23-CSE-206	Design and Analysis Algorithms	4	3:1:0	4
10	B23-CSE-208	Principles of Programming Languages	4	3:0:0	3
11	B23-CSE-210	Advanced Programming Lab (Java)	4	0:0:4	2
12	B23-CSE-212	Digital Electronics Lab	4	0:0:4	2
13	B23-CSE-214	Design & Analysis Algorithms Lab	4	0:0:4	2
14	B23-CSE-301	Web and Internet Technology	5	3:0:0	3
15	B23-CSE-303	Introduction to Database System	5	3:0:0	3
16	B23-CSE-305	Machine Learning	5	3:1:0	4
17	B23-CSE-307	Operating Systems	5	3:0:0	3
18	B23-CSE-309	Web and Internet Technology Lab	5	0:0:4	2
19	B23-CSE-311	Introduction to Database Systems Lab	5	0:0:4	2
20	B23-CSE-313	Machine Learning Lab	5	0:0:4	2
21	B23-CSE-315	Industrial Training-I	5	0:0:0	0
22	B23-CSE-302	Computer Networks	6	3:0:0	3
23	B23-CSE-304	Big Data Analytics and Visualization	6	3:0:0	3
24	B23-CSE-306	Software Engineering	6	3:0:0	3
25	B23-CSE-308	Computer Networks Lab	6	0:0:4	2
26	B23-CSE-310	Big Data Analytics and Visualization Lab	6	0:0:4	2
27	B23-CSE-401	Cloud Computing	7	3:0:0	3
28	B23-CSE-403	Unix and Linux programming	7	3:0:0	3
29	B23-CSE-405	Cloud Computing Lab	7	0:04	2
30	B23-CSE-407	Unix and Linux programming Lab	7	0:0:4	2
Total					**75**

******

SKILL ENHANCEMENT BASED PROJECTWORK, SEMINAR AND INTERNSHIP

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1	B23-CSE-312	Project-1	VI	0:0:4	2
2	B23-CSE-409	Project-II	VII	0:0:8	4
3	B23-CSE-402	Project-III	VIII	0:0:20	10
4	B23-CSE-315	Industrial Training-I	V	0:0:0	0
5	B23-CSE-411	Industrial Training-II	VII	0:0:0	0
Total					**16**

PROGRAMME ELECTIVES[PEC]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1		PEC-I	PROGRAM ELECTIVE-I	VI	3:0:0
2		PEC-II	PROGRAM ELECTIVE-II	VI	3:0:0
3		PEC-III	PROGRAM ELECTIVE-III	VII	3:0:0
4		PEC-IV	PROGRAMELECTIVE- IV	VIII	3:0:0
5		PEC-V	PROGRAM ELECTIVE-V	VIII	3:0:0
		Total			**15**

LIST OF PROGRAMME ELECTIVE COURSES [PEC]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1	B23-PEC-314	Android and Mobile App Development	VI	3:0:0	3
2	B23-PEC-316	Deep Learning	VI	3:0:0	3
3	B23-PEC-318	Natural Language Processing	VI	3:0:0	3
4	B23-PEC-320	Automata Theory	VI	3:0:0	3
5	B23-PEC-322	Compiler Design	VI	3:0:0	3
6	B23-PEC-324	Theory of Computation	VI	3:0:0	3
7	B23-PEC-413	Soft Computing	VII	3:0:0	3
8	B23-PEC-415	Neural network and Fuzzy logic	VII	3:0:0	3
9	B23-PEC-417	Simulation and Modelling	VII	3:0:0	3
10	B23-PEC-404	Agile Software Engineering	VIII	3:0:0	3
11	B23-PEC-406	Software Verification, Validation and Testing	VIII	3:0:0	3
12	B23-PEC-408	Software Project Management	VIII	3:0:0	3
13	B23-PEC-410	Social Networks	VIII	3:0:0	3
14	B23--PEC-412	AI and Robotics	VIII	3:0:0	3
15	B23--PEC-414	Block Chain Technology	VIII	3:0:0	3
16	B23-PEC-416	Health Care and Analytics	VIII	3:0:0	3

OPEN ELECTIVES[OEC]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1		OPEN ELECTIVE-I	OPEN ELECTIVE-I	VII	3:0:0
		Total			**3**

LIST OF OPEN ELECTIVE COURSES [OEC]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1	B23-OEC-417	Cyber Law and Ethics	VII	3:0:0	3
2	B23-OEC-419	International and Corporate Law	VII	3:0:0	3
3	B23-OEC-421	Internet of Things	VII	3:0:0	3
4	B23-OEC-423	Bioinformatics	VII	3:0:0	3

VALUE ADDED AND MANDATORYCOURSES [VAC/MAC]

S. No.	Course No./ Code	Subject	Semester	Hrs/Week L:T:P	Credits
1	B23-VAC-101	Personality Development and Soft Skills	II	2:0:0	1
2	B23-VAC-110	IDEA Workshop Theory	I	2:0:0	1
3	B23-VAC-112	IDEA Project Workshop	I	0:0:2	1
4	B23-VAC-302/304/306/308/310	Hindi Language Skills/ Sanskrit Language Skills/ German Language Skills/ Japanese Language Skills/ French Language Skills	V	2:0:0	1
5	B23-VAC-401/403/405/407/409/411	NCC/NSS/Sports/ Yoga/ Technical or Cultural Club/Society activities	VII	0:0:2	1
6	B23-MAC-201	Environmental Studies	IV	2:0:0	1
7	B23-MAC-202	Essence of Indian Traditional Knowledge	III	2:0:0	1
8	B23-MAC-301	Constitution of India	VI	2:0:0	1
Total					**8**

SEMESTER WISE STRUCTURE

B.Tech. Computer Science and Engineering (CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER I

S.No.	Course No./Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule(Marks)				Duration of exam (Hours)
						End Semester Exam	Internal assessment	Practical exam	Total	
1	B23-BSC-101	Semiconductor Physics	3:1:0	4	4	70	30	--	100	3
2	B23-HSM-101	Universal Human Values-II: Understanding Harmony and Ethical Human conduct	3:0:0	3	3	70	30	--	100	3
3	B23-ESC-102	Engineering Graphics and Design	1:0:0	1	1	70	30	--	100	3
4	B23-ESC-104	Basic Electrical Engineering	3:1:0	4	4	70	30	--	100	3
5	B23-BSC-107	Mathematics-I	3:1:0	4	4	70	30	--	100	3
6	B23-BSC-111	Semiconductor Physics Lab	0:0:2	2	1	--	40	60	100	3
7	B23-ESC-106	Engineering Graphics and Design Lab	0:0:4	4	2	--	40	60	100	3
8	B23-ESC-109	Basic Electrical Engineering Lab	0:0:2	2	1	--	40	60	100	3
9	B23-VAC-110	IDEA Workshop	2:0:0	2	1	--	100	--	100	3
10	B23-VAC-112	IDEA Project Workshop	0:0:2	2	1	--	100	--	100	3
11	B23-HSC-102	Design Thinking	0:0:3	3	1.5	-	100	--	100	3
		TOTAL		**30**	**23.5**	**350**	**570**	**180**	**1100**	**-**

Note:
- NCC/NSS/Sports/Yoga/Technical/cultural club/society activities will be joined by students in first year and will be evaluated in 7th semester by the institute based upon continuous evaluation model as per guidelines.

Scheme of UG Degree course in Computer Science and Engineering (CSE)
w.e.f. session 2023-24 onwards

B.Tech. Computer Science and Engineering (CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER II

S.No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule(Marks)				Duration of exam (Hours)
						End Semester	Internal assessment	Practical Exam	Total	
1	B23-HSC-101	English for Technical Writing	2:0:0	2	2	70	30	--	100	3
2	B23-ESC-101	Programming for Problem Solving	3:0:0	3	3	70	30	--	100	3
3	B23-BSC-104	Engineering Chemistry	3:0:0	3	3	70	30	--	100	3
4	B23-BSC-108	Mathematics-II	3:1:0	4	4	70	30	--	100	3
5	B23-BSC-106	Biology	3:0:0	3	3	70	30	--	100	3
6	B23-HSC-103	English Language Lab	0:0:2	2	1	--	40	60	100	3
7	B23-ESC-105	Programming for Problem Solving Lab	0:0:2	2	1	--	40	60	100	3
8	B23-ESC-107	Manufacturing Processes Workshop	0:0:3	3	1.5	--	40	60	100	3
9	B23-ESC-114	Engineering Chemistry Lab	0:0:2	2	1	--	40	60	100	3
10	B23-VAC-101	Personality Development and Soft Skills	2:0:0	2	1	--	100	--	100	3
	TOTAL			26	20.5	350	410	240	1000	

Scheme of UG Degree course in Computer Science and Engineering (CSE)
w.e.f. session 2023-24 onwards

B.Tech. Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER-III

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule(Marks)				Duration of exam (Hours)
						End Semester Exam	Internal assessment	Practical Exam	Total	
1	B23-CSE-201	Data Structures and Algorithms	3:0:0	3	3	70	30	0	100	3
2	B23-CSE-203	Computer Organization & Architecture	3:0:0	3	3	70	30	0	100	3
3	B23-CSE-205	Object Oriented Programming	3:0:0	3	3	70	30	0	100	3
4	B23-CSE-207	IT Workshop (Python)	2:0:0	2	2	70	30	0	100	3
5	B23-BSC-203	Probability and Statistics	3:0:0	3	3	70	30	0	100	3
6	B23-HSM-201	Organizational Behaviour	3:0:0	3	3	70	30	0	100	3
7	B23-CSE-209	Data Structures and Algorithms Lab	0:0:4	4	2	0	40	60	100	3
8	B23-CSE-211	Object Oriented Programming Lab	0:0:4	4	2	0	40	60	100	3
9	B23-CSE-213	IT Workshop (Python) Lab	0:0:4	4	2	0	40	60	100	3
10	B23-MAC-202	Essence of Indian Traditional Knowledge	2:0:0	2	1	--	100	--	100	3
	TOTAL			31	24	420	400	180	1000	

B.Tech.Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER-IV

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	End Semester Exam	Internal assessment	Practical Exam	Total	Duration of exam (Hours)
1	B23-CSE-202	Advanced Programming (Java)	3:0:0	3	3	70	30	0	100	3
2	B23-ESC-212	Digital Electronics	3:0:0	3	3	70	30	0	100	3
3	B23-CSE-204	Design and Analysis Algorithms	3:1:0	4	4	70	30	0	100	3
4	B23-CSE-206	Principles of Programming Languages	3:0:0	3	3	70	30	0	100	3
5	B23-HSM-302	Intellectual Property Rights (IPR) and Regulatory	3:0:0	3	3	70	30	0	100	3
6	B23-CSE-208	Advanced Programming Lab (Java)	0:0:4	4	2	0	40	60	100	3
7	B23-ESC-214	Digital Electronics Lab	0:0:4	4	2	0	40	60	100	3
8	B23-CSE-212	Design & Analysis Algorithms Lab	0:0:4	4	2	0	40	60	100	3
9	B23-MAC-201	Environmental Studies	2:0:0	2	1	--	100	0	100	3
		TOTAL		**30**	**23**	**350**	**370**	**180**	**900**	

Note:
➢ All students have to undertake the industrial training for 6 to 8 weeks after 4th semester which will be evaluated in 5th semester.

B.Tech.Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER-V

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	End Semester Exam	Internal assessment	Practical Exam	Total	Duration of exam (Hours)
1	B23-CSE-301	Web and Internet Technology	3:0:0	3	3	70	30	0	100	3
2	B23-CSE-303	Introduction to Database System	3:0:0	3	3	70	30	0	100	3
3	B23-CSE-305	Machine Learning	3:1:0	4	4	70	30	0	100	3
4	B23-CSE-307	Operating Systems	3:0:0	3	3	70	30	0	100	3
5	B23-HSM-202	Innovation, Startups and Entrepreneurship	3:0:0	3	3	70	30	0	100	3
6	B23-CSE-309	Web and Internet Technology Lab	0:0:4	4	2	0	40	60	100	3
7	B23-CSE-311	Introduction to Database Systems Lab	0:0:4	4	2	0	40	60	100	3
8	B23-CSE-313	Machine Learning Lab	0:0:4	4	2	0	40	60	100	3
9	B23-CSE-315	Industrial Training-I	0:0:0	0	0	--	100	--	100	3
10	B23-VAC-302/304/306/308/310	Hindi Language Skills/ Sanskrit Language Skills/ German Language Skills/ Japanese Language Skills/ French Language Skills	2:0:0	2	1	--	100	--	100	3
	TOTAL			**30**	**23**	**350**	**470**	**180**	**1000**	

Note:
  ➢ B23-CSE-315 is a mandatory non-credit course in which the students will be required to get passing marks.

B. Tech. Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER-VI

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	End Semester Exam	Internal assessment	Practical Exam	Total	Duration of exam (Hours)
						Examination Schedule(Marks)				
1	B23-CSE-302	Computer Networks	3:0:0	3	3	70	30	0	100	3
2	B23-CSE-304	Big Data Analytics and Visualization	3:0:0	3	3	70	30	0	100	3
3	--	Program Elective-I	3:0:0	3	3	70	30	0	100	3
4	--	Program Elective-II	3:0:0	3	3	70	30	0	100	3
5	B23-CSE-306	Software Engineering	3:0:0	3	3	70	30	0	100	3
6	B23-CSE-308	Computer Networks Lab	0:0:4	4	2	0	40	60	100	3
7	B23-CSE-310	Big Data Analytics and Visualization Lab	0:0:4	4	2	0	40	60	100	3
8	B23-CSE-312	Project-1	0:0:4	4	2	0	40	60	100	3
9	B23-MAC-301	Constitution of India	2:0:0	2	1	--	100	--	100	3
		TOTAL		29	22	350	370	180	900	

Note:

- ThecourseofbothProgramElectiveandOpenElectivewillbeofferedat1/3rdstrengthor20students(whicheverissmaller)ofthesection.
- All students have to undertake the industrial training for 6 to 8 weeks after 6th semester which will be evaluated in 7th semester.

Program Elective-I		Program Elective-II	
Android and Mobile App Development	B23-PEC-314	Automata Theory	B23-PEC-320
Deep Learning	B23-PEC-316	Compiler Design	B23-PEC-322
Natural Language Processing	B23-PEC-318	Theory of Computation	B23-PEC-324

B.Tech.Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA
SEMESTER-VII

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule(Marks)				Duration of exam
						End Semester Exam	Internal assessment	Practical Exam	Total	
1	B23-CSE-401	Cloud Computing	3:0:0	3	3	70	30	0	100	3
2	--	Program Elective-III	3:0:0	3	3	70	30	0	100	3
3	--	Open Elective-I	3:0:0	3	3	70	30	0	100	3
4	B23-CSE-403	Unix and Linux programming	3:0:0	3	3	70	30	0	100	3
5	B23-CSE-405	Cloud Computing Lab	0:0:4	4	2	0	40	60	100	3
6	B23-CSE-407	Unix and Linux Programming Lab	0:0:4	4	2	0	40	60	100	3
7	B23-CSE-409	Project-II	0:0:8	8	4	0	40	60	100	3
8	B23-CSE-411	Industrial Training-II	0:0:0	0	0	--	100	--	100	3
9	B23-VAC-401/403/405/407/409/411	NCC/NSS/Sports/ Yoga/ Technical or Cultural Club/Society activities	0:0:2	2	1	--	100	--	100	--
	TOTAL			30	21	280	440	180	900	

Note:

➢ **Th**e course of both Program Elective and Open Elective will be offered at1/3rd strength or 20 students(whichever is smaller)of the section.
➢ B23-CSE-411 is a mandatory non-credit course in which the students will be required to get passing marks
➢ B23-VAC-401/403/405/407/409/411 are single credit value added courses in which NCC/NSS/Sports/Yoga/Technical or Cultural Club/Society activities will be joined by students in first year and will be evaluated in 7th semester by the institute based upon continuous evaluation model as per guidelines**.**

Program Elective-III		Open Elective-I	
Soft Computing	B23-PEC-413	Cyber Law and Ethics	B23-OEC-419
Neural network and Fuzzy logic	B23-PEC-415	International and Corporate Law	B23-OEC-421
Simulation and Modelling	B23-PEC-417	Internet of Things	B23-OEC-423
		Bioinformatics	B23-OEC-425

B.Tech.Computer Science and Engineering(CSE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA

SEMESTER-VIII

S. No.	Course No./Code	Subject	L:T:P	Hours/ Week	Credits	ExaminationSchedule(Marks)				Duration ofexam(Hours)
						End Semester Exam	Internal assessment	Practical Exam	Total	
1	--	Program Elective-IV	3:0:0	3	3	70	30	0	100	3
2	--	Program Elective-V	3:0:0	3	3	70	30	0	100	3
3	B23-CSE-402	Project-III / Industrial Project/ Research Lab/ /Start ups / Entrepreneurship	0:0:20	20	10		200	200	400	3
TOTAL				26	16	140	260	200	600	

Note:

➢ ThecourseofbothProgramElectiveandOpenElectivewillbeofferedat1/3ʳᵈstrengthor20students(which ever is smaller) of the section.
➢ In case of semester-long project work done in industry/external institute, the Program Elective- IV and Open Elective-IV may be offered in online mode through MOOC courses offered by SWAYAM/NPTEL portal. These courses may be done from 3ʳᵈ semester till completion of the degree.

Program Elective -IV	Program Elective -V	
Agile Software Engineering B23-PEC-404	Social Networks B23-PEC -410	
Software Verification, Validation and Testing B23-PEC -406	AI and Robotics	B23-PEC -412
Software Project Management B23-PEC-408	Block Chain Technology	B23-PEC -414
	Health Care and Analytics	B23-PEC -416

Computer Science and Engineering

Students of Computer Science and Engineering are offered to earn **ADDITIONAL 18-20 CREDITS** through MOOCs/SWAYAM courses as per the 'Guidelines to implement the SWAYAM/MOOCs/ other authorized online courses (OAOC) of Kurukshetra University, Kurukshetra' in any of the emerging areas mentioned below for the award of the degree of:

1. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Artificial Intelligence and Machine Learning.**
2. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Blockchain.**
3. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Data Science.**
4. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Internet of Things (IoT).**
5. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Cyber Security.**
6. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Software Engineering.**
7. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Agile Software.**
8. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Software Validation, Verification and Testing.**
9. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Smart Healthcare.**
10. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Cloud Computing.**
11. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Big Data Analytic.**
12. **B.Tech. (Hons.) Computer Science and Engineering with Specialization in Data Security and Cryptography.**
13. **B.Tech. Computer Science and Engineering with Minor Degree in 3D Printing.**
14. **B.Tech. Computer Science and Engineering with Minor Degree in Electric Vehicles.**
15. **B.Tech. Computer Science and Engineering with Minor Degree in Energy .Engineering.**
16. **B.Tech. Computer Science and Engineering with Minor Degree in Robotics.**
17. **B.Tech. Computer Science and Engineering with Minor Degree in Mechatronics.**
18. **B.Tech. Computer Science and Engineering with Minor Degree in Computer Science and Biology.**
19. **B.Tech. Computer Science and Engineering with Minor Degree in Drug Engineering.**
20. **B.Tech. Computer Science and Engineering with Minor Degree in Genome Engineering and Technology.**